PATENT APPLICATION TRANSMITTAL LETTER
(Small Entity)

Docket No.
00322-0003

TO THE ASSISTANT COMMISSIONER FOR PATENTS

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. 1.53 is the patent application of:

ERIK NIKKANEN

For: **PRINTING PRESS INK TRANSFER MECHANISM AND EMPLOYMENT OF SAME**

Enclosed are:

- ☐ Certificate of Mailing with Express Mail Mailing Label No.
- ☒ **8** sheets of drawings.
- ☐ A certified copy of a application.
- ☒ Declaration ☒ Signed. ☐ Unsigned.
- ☐ Power of Attorney
- ☐ Information Disclosure Statement
- ☐ Preliminary Amendment
- ☐ Verified Statement(s) to Establish Small Entity Status Under 37 C.F.R. 1.9 and 1.27.
- ☐ Other:

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra		Rate	Fee
Total Claims	14	- 20 =	0	x	$9.00	$0.00
Indep. Claims	3	- 3 =	0	x	$40.00	$0.00
Multiple Dependent Claims (check if applicable) ☐						$0.00
					BASIC FEE	$355.00
					TOTAL FILING FEE	$355.00

☒ A check in the amount of **$355.00** to cover the filing fee is enclosed.

☐ The Commissioner is hereby authorized to charge and credit Deposit Account No. as described below. A duplicate copy of this sheet is enclosed.

- ☐ Charge the amount of as filing fee.
- ☐ Credit any overpayment.
- ☐ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: **November 1, 2000**

Signature

cc:

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) AND 1.27 (b)) - INDEPENDENT INVENTOR	Docket No. 00322-0003

Serial No.	Filing Date	Patent No.	Issue Date
60,168,756	December 6, 1999		

Applicant/ Patentee: **Erik Nikkanen**

Invention: **Printing Press Ink Transfer Mechanism And Employment of Same**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled above and described in:

- ☐ the specification to be filed herewith.
- ☒ the application identified above.
- ☐ the patent identified above.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☐ No such person, concern or organization exists.
- ☒ Each such person, concern or organization is listed below.

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities (37 CFR 1.27)

FULL NAME **Fountech Inc.**

ADDRESS **2911 Bayview Avenue, Unit 102H Toronto, Ontario M2K 1E8**

☐ Individual ☒ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____

ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____

ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____

ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF INVENTOR Erik Nikkanen

SIGNATURE OF INVENTOR Erik Nikkanen DATE: Nov 1, 2000

NAME OF INVENTOR ____________

SIGNATURE OF INVENTOR ____________ DATE: ________

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SIGNATURE OF INVENTOR ____________ DATE: ________

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN	Docket No. 8700322-0003

Serial No.	Filing Date	Patent No.	Issue Date
60,168,756	December 6, 1999		

Applicant/ Patentee: **Erik Nikkanen**

Invention: **Printing Press Ink Transfer Mechanism And Employment Of Same**

I hereby declare that I am:

- ☐ the owner of the small business concern identified below:
- ☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN: **Fountech Inc.**

ADDRESS OF CONCERN: **2911 Bayview Avenue, Unit 102H Toronto, Ontario M2K 1E8**

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above identified invention described in:

- ☐ the specification filed herewith with title as listed above.
- ☒ the application identified above.
- ☐ the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed on the next page and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ no such person, concern or organization exists.
☐ each such person, concern or organization is listed below.

FULL NAME _____
ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
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☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME _____
ADDRESS _____

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: **Erik Nikkanen**

TITLE OF PERSON SIGNING OTHER THAN OWNER: PRESIDENT

ADDRESS OF PERSON SIGNING: **2911 Bayview Avenue, Unit 102H**
Toronto, Ontario
M2K 1E8

SIGNATURE: Erik Nikkanen DATE: **November 1, 2000**

PRINTING PRESS INK TRANSFER MECHANISM AND EMPLOYMENT OF SAME

The present invention relates to the transfer of ink in a printing press.

BACKGROUND OF THE INVENTION

Modern printing presses are designed to operate at high speeds and are expected to produce quality images at variable press speeds, water settings, and press temperatures. There currently exists a problem of inconsistent colour control in modern printing presses due to changes in the above mentioned parameters. One potential error source is in the method of ink transference from the ink fountain roller to the high speed roller train of the press.

Modern press designs have two different types of ink ductors, either intermittent or continuous. The disadvantage of these designs is that they both suffer from inconsistent ink transfer. The ink supply is initially metered by an ink fountain blade and then transferred by way of the ductor to the high speed roller train of the press. One disadvantage of this system is that in transferring the metered ink flow rate from the ink fountain roller, a certain portion of the ink may not be transferred and will therefore be returned to the ink fountain. As such, the amount of ink transferred to the press is not known.

The net transfer of ink to the printing press is preferred to be in a state of equilibrium for most printing applications. This equilibrium is easily disturbed by changes in variables such as press speed, water setting, and temperature of the high speed roller train. After such disturbances, a new equilibrium is established that results in a new and usually different ink transfer rate to the printing press. The disadvantage of this is that if the metered ink flow rate supplied by the fountain blade is constant, the ink transfer rate to the printing press must change with the change in variables. This variability in ink transfer rate could eventually result in an undesired solid colour density change of the printed material produced by the printing press.

Another disadvantage with present printing press systems is that adjustments have to be made to the ink flow settings when the press runs at different speeds. The correct setting of ink keys and ink fountain roller settings to provide a desired ink transfer rate are not always predictable.

It is an object of the present invention to obviate or mitigate the above mentioned disadvantages.

SUMMARY OF THE INVENTION

The present invention provides a printing press ink transfer mechanism including a supply roller to collect ink from an ink supply. A primary flow metering device for the ink and a secondary flow metering device for the ink are coupled to the supply roller on opposite sides of a liquid flow output. A measurable difference in flow of the ink between the metering devices is supplied to an ink flow output. A plurality of transfer rollers can be employed to transfer the flow output to the printing press.

A further aspect of the invention provides a method of metering ink from a supply roller including the steps of (a) metering a flow of the ink onto the supply roller to produce a primary flow, (b) metering of the primary flow transferred by the supply roller to produce a secondary flow, (c) separating a difference between the primary flow and the secondary flow from the supply roller to produce a tertiary flow, directed away from the supply roller.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features of the preferred embodiments of the invention will become more apparent in the following detailed description in which reference is made by way of example only to the appended drawings wherein:

Figure 1 is a side view of an ink transfer mechanism for a printing press.

Figure 2 is an enlarged view of Figure 1.

Figure 3 is an enlarged view of Figure 2.

Figure 4 shows further embodiments of the blade portion of Figure 3.

Figure 5 is a further embodiment of Figure1.

Figure 6 demonstrates a disengagement position of the blade assembly of Figure 1.

Figure 7 demonstrates an engagement position of the blade assembly of Figure 1.

Figure 8 shows various operational settings of the embodiment of Figure 1.

Figure 9 is a further embodiment of Figure 1.

Figure 10 is a section 10-10 view of Figure 9.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figure 1 a ink transfer mechanism 10 suitable for a printing press 18 includes a supply roller 12, having an exterior surface 34 and rotatable about an axis 13. A reservoir 16 contains ink 14, which is metered onto the exterior surface 34 by a first blade assembly 20. The first blade assembly 20 includes a blade 26 which is spaced from the external surface 34 by a supply gap 30. The supply gap 30 is set by adjusting a position of the first blade 26 relative to the external surface 34 to control the thickness of a film 19 applied to the external surface 34. The blade assembly 20 is of conventional construction as is well known in the art and therefore will not be described in further detail.

A second blade assembly 24 is spaced along the circumference of the roller 12 in the direction of rotation 22 and meters the ink 14 returned to the reservoir 16. The second blade assembly 24 includes a blade portion 41, as shown in Figure 2, that is spaced from the exterior surface 34 to provide a return gap 32. The thickness of a return film 21 is controlled by setting the position of the blade portion 41 with respect to the exterior surface 34, which defines the return gap 32. A typical operational range for the return gap 32 is 0.001 inches to 0.006 inches. The blade assembly 24 may move from an operative position, in which the metered blade 24 is held at the operative gap 32 to a retracted position in which the blade is moved away from the roller 12 to permit unmetered return of the ink.

The first blade assembly 20 determines the flow rate of ink 14 from the reservoir 16, indicated as Q_{in}, and the second blade assembly 24 determines the rate of flow of ink 14 returned to the reservoir 16, indicated as Q_{ret}. The difference in the flow rates Q_{in}, Q_{ret} determines an output flow rate Q_{out} that is delivered from the roller 12 to a transfer roller assembly 35 and onto a printing web 23 of the printing press 18. By adjusting the gap 30 and the speed of the roller 21 relative to the speed of the press 18, the output flow rate Q_{out} is adjusted accordingly.

As can best be seen in Figure 2, a pair of bolts 38 mount the second blade assembly 24 onto a support structure 36. The support structure 36 is sufficiently rigid to facilitate negligible variability in the gap 32, once set to a desired tolerance. Referring to Figure 3, the tip 42 of the blade portion 41 has a contoured surface 48 directed toward the exterior surface indicated at 34 in ghosted view. The contoured surface 48 includes an arcuate entrance 50, a middle section 52 substantially parallel to a tangent of the surface 34, and a sharp exit 54. The contoured surface 48 helps to inhibit a vena contracta condition in the return flow Q_{ret}, a phenomena well known in

the art of fluid mechanics. The entrance 50 has a shallow approach angle 56 of less than twenty degrees, the middle section 52 measures approximately 0.01 inches to 0.02 inches, and the exit angle 53 is approximately 90° with respect to the exterior surface 34.

The output flow Q_{out} is directed away from the entrance region 50 of the blade portion 41 towards the transfer assembly 35 by a transfer surface 58. The transfer surface 58 is located on a extremity 60 of the blade portion 41 and helps to direct the output flow Q_{out} almost perpendicularly away from the exterior surface 34 of supply roller 12. In the preferred embodiment, the transfer surface 58 is relatively short, approximately 0.10 inches, in order to inhibit a reduction in the flow speed and possible collection of the output flow Q_{out} on the extremity 60. A sharp corner 62 is located at the end of the transfer surface 58 to encourage the output flow Q_{out} to separate and fall into the transfer assembly 35. As shown in Figure 4, gives example various geometries of the blade portion 41, as indicated by blade portions 92, 94, 96, 98, and 100 may be used. The geometry of the second blade assembly 24 and the magnitude of the return gap 32 for a particular application can depend on considerations pertaining to the design of the first blade assembly 20, viscosity of the ink 14, simplicity of manufacture, and ease of cleaning the blade assembly 24.

Referring to Figure 5, the transfer assembly 35 comprises a series of transfer rollers 64, 66, which are employed to transfer the metered output flow Q_{out} to a high speed roller train 68 of the printing press 18. The rotating transfer rollers 64, 66 are held in a fixed spatial position with respect to the rollers 12 and 68. The roller 66 preferably has a squeeze nip contact 74 with the first roller in the roller train 68. The roller 64 also has a squeeze nip contact 76 with the roller 66. A transfer gap 70 is maintained between the roller 64 and the supply roller 12, which permits access of the output flow Q_{out} to the roller 66. A pocket 72 between the rollers 12, 64, 66 is positioned so as to direct ink 14 directed from the transfer gap 70 to the squeeze nip 76. In the preferred embodiment, the transfer gap 70 is larger than the maximum thickness of the input film 19. In the case where the ink transfer operation is improved by having the gap 70 at a value less than the maximum input film 19, then roller 64 is retracted to a position that makes gap 70 greater than the maximum input film 19 during the non operating condition. A typical range for the transfer gap 70 is 0.02 inches to 0.03 inches.

In operation of the fluid transfer mechanism 10, reference is made to Figures 1, 5, and 8. The ink 14 is deposited onto the rotating supply roller 12, as the exterior surface 34 is passed

through the reservoir 16. The first blade assembly 20 meters the input flow Q_{in} to the desired film thickness 19. The exterior surface 34 of the supply roller 12 carries the input flow Q_{in} relatively undisturbed, until it comes into contact with the second blade assembly 24. At this point the flow Q_{in} is separated into the constant return flow Q_{ret} which passes through the gap 32 and the output flow Q_{out} which is directed away from the surface 34 by the second blade portion 41 to the transfer mechanism 35 (not shown).

The second blade assembly 24 meters the return flow Q_{ret} to the film thickness 21, which is carried by the roller 12 back to the reservoir 16. The resultant difference between the metered input flow Q_{in} and the metered return flow Q_{ret}, namely the output flow Q_{out}, moves along the transfer surface 58 of the extremity 60. In this manner, the resultant flow rate of the output flow Q_{out} is also metered. Once the flow Q_{out} separates from the blade portion 41, the flow Q_{out} falls onto the roller 64 and is directed into the transfer gap 70. At this stage, the flow Q_{out} is either sprayed into the pocket 72 and carried by the roller 66 to the squeeze nip contact 76, or the flow Q_{out} is carried directly by the roller 64 to the squeeze nip contact 76.

The nip contact 76 can be used to limit the thickness of the ink film 78 contacting the roller train 68. This can be done by choosing higher durometer values for the roller 64 or 68, which will effectively smooth out random ink film variations. The roller 68 then supplies this conditioned ink film to the press 18. The metered film thicknesses 19, 21 facilitate repeatable measurements of the ink 14 entering the printing press 18, namely the output flow Q_{out}, for a constant values of a rotational speed of the supply roller 12.

Referring to Figure 6 the blade assembly 24 is shown in a retracted position, i.e. in a spaced apart relationship with respect to the roller 12, in which the return gap 32 is greater than the input film thickness 19. This retracted position results in the return flow Q_{ret} equaling the input flow Q_{in}, which provides for a zero output flow Q_{out}. When the support structure 36 is displaced towards the roller 12, shown in Figure 7, the second blade assembly 24 comes into an operative position, i.e. close proximity with the surface 34 of the roller 12. In the operative position the return gap 32 is less than the input film thickness 19. This allows the secondary blade assembly 24 to divide the input flow Q_{in} into a decreased return flow Q_{ret} and the resulting output flow Q_{out}, where $Q_{out} = Q_{in} - Q_{ret}$.

As shown in Figure 8, the zero Q_{out} condition can also be obtained by restricting the supply gap 30 to less than that of the return gap 32, when the blade assembly 24 is in the

engaged position of Figure 7. This flow setting also makes the input flow Q_{in} equal to the return flow Q_{ret}, thereby inhibiting the flow of ink 14 to the printing press 18. By adjusting the gap 30 of the blade assembly 20 with respect to the surface 34, as shown by arrow 90, the output flow Q_{out} may be monitored and adjusted accordingly.

The employment of the blade assemblies 20, 24 facilitate a repeatable measurement of the fluid volume contained in the output flow Q_{out} for a prescribed speed of the roller 12. This fluid volume calculation is based on the difference in measured film thicknesses 19, 21 of the flows Q_{in}, Q_{ret} respectively.

In a further embodiment, a plurality of spacers 86 are attached to the second blade portion 41 shown in Figures 9 and 10. The thickness of the spacer 86 dictates the magnitude of the return gap 32. A coil spring 44 is positioned on the bolts 38 to provide constant contact between the spacer 86 and the surface 34, which helps to provide a constant return gap 32 for a particular operational setting of the second blade assembly 24. The coil spring 44 acts on the shaft 40 to bias the tip 42 of the attached blade portion 41 towards the surface 34. Incorporation of the spacers 86 and coil springs 44 in the second blade assembly 24 facilitates the employment of a more flexible support structure 36, if desired. The spacer 86 can be attached onto the blade portion 41 by machining, welding, or mechanically.

The printing press ink transfer mechanism 10 can be applied to a number of press types such as lithograph, letterpress, dry offset, waterless offset, as well as coaters. The mechanism 10 can also be applied to web or sheet fed processes, open ink fountains, or inkers that pump ink 14 onto the ink fountain roller 12 via ink rails. It is appreciated that transfer assemblies 35 other than those described may be substituted. Differently configured second blade assemblies 24 may be used to provide metering for the return flow Q_{ret}, such as blade tips with different shapes or scrapers that are in direct contact with the supply roller 12. It is recognized that the first blade assembly 20 and the second blade assembly 24 can be composed of a plurality of adjacent sections distributed along the length of the roller 12, if desired.

Although the invention has been described with reference to certain specific embodiments, various modifications thereof will be apparent to those skilled in the art without departing from the spirit and scope of the invention as outlined in the claims appended hereto.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. An ink transfer mechanism for a printing press including a supply roller to collect ink from a liquid supply, a primary flow metering device to produce a primary flow of said ink carried by said roller, and a secondary flow metering device spaced from said primary flow metering device to provide a secondary flow on said roller, whereby a difference in the flow of said liquid between said metering devices is supplied to a flow output.

2. An ink transfer mechanism according to claim 1, wherein said secondary flow metering device includes a blade portion.

3. An ink transfer mechanism according to claim 1, wherein said secondary flow metering device is biased towards said supply roller.

4. An ink transfer mechanism according to claim 2, wherein said secondary flow metering device moves between an operative position which provides a predetermined separation distance between said blade portion and an outer surface of said supply roller, and a retracted position.

5. An ink transfer mechanism according to claim 2, wherein said blade portion includes a contoured surface portion.

6. An ink transfer mechanism according to claim 5, wherein said contoured surface portion is arcuate.

7. An ink transfer mechanism according to claim 3, wherein a predetermined magnitude of said separation distance is maintained by an element located between said exterior surface and said blade portion.

8. A method of metering ink from a supply roller of a printing press including the steps of: metering of a flow of said ink onto said supply roller to produce a primary flow, metering of said primary flow transferred by said supply roller to produce a secondary flow, directing a difference

between said primary flow and said secondary flow from a surface of said supply roller to produce a tertiary flow.

9. A metering device to monitor the return flow of ink to an ink supply of a printing press.

10. The metering device of claim 9, wherein said metering device includes a body and a blade portion connected to said body.

11. A metering device according to claim 10, wherein an end portion of said blade portion is arcuate.

12. The metering device of claim 10, wherein said blade portion includes a contoured surface having an entrance region, a middle region, and an exit region.

13. A metering device according to claim 12, wherein said entrance region contains a shallow angle of less than 20 degrees with respect to an adjacent surface.

14. A metering device according to claim 10, wherein an end portion of said blade portion includes a corner region to promote separation of ink flow along said end portion.

ABSTRACT

A printing press ink transfer mechanism includes a primary flow metering device to monitor the flow of ink from an ink supply and a secondary flow metering device to monitor the return flow of the ink to the ink supply. The difference in ink flow between the supply and return is delivered to the application rollers of a printing press.

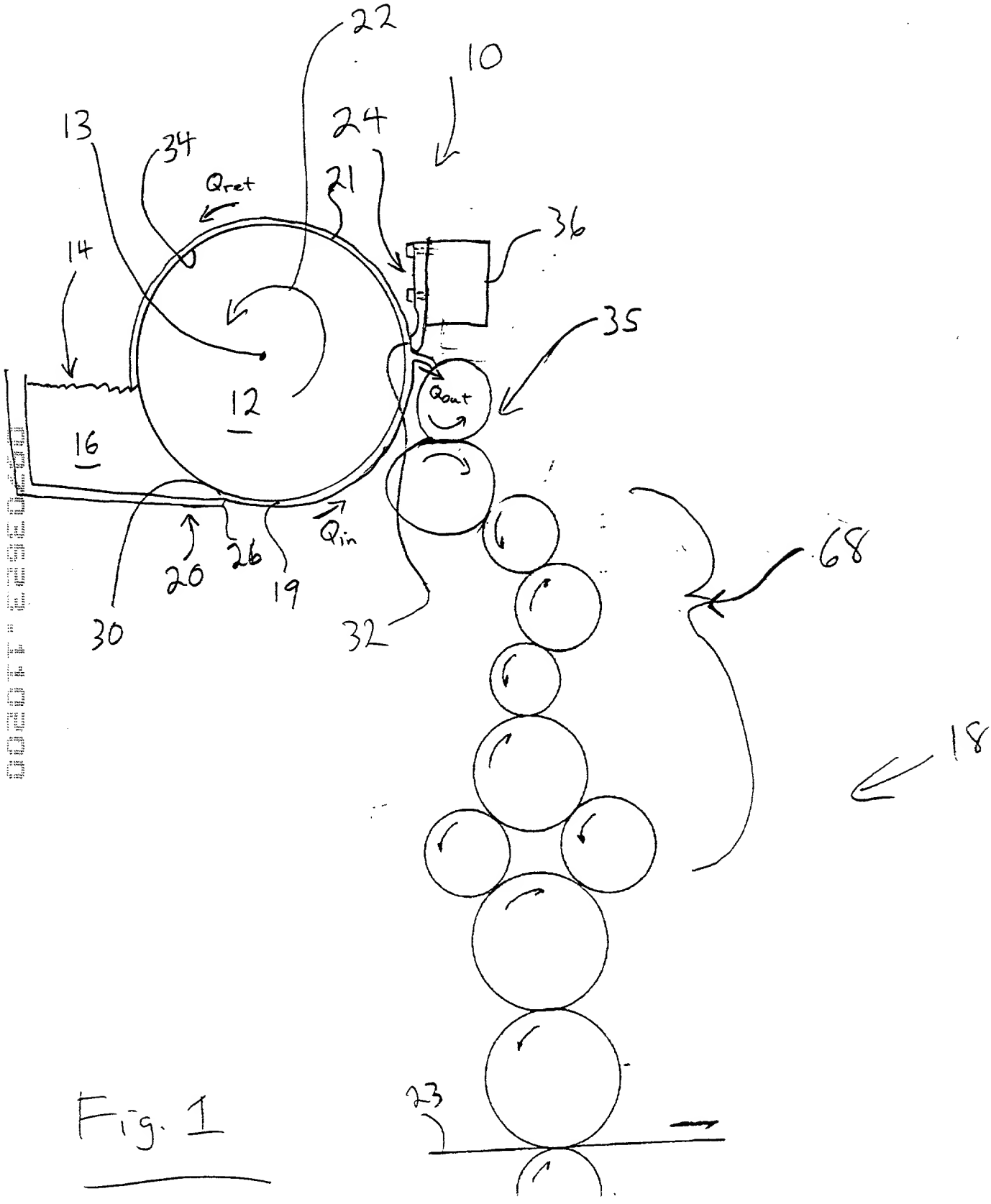

Fig. 1

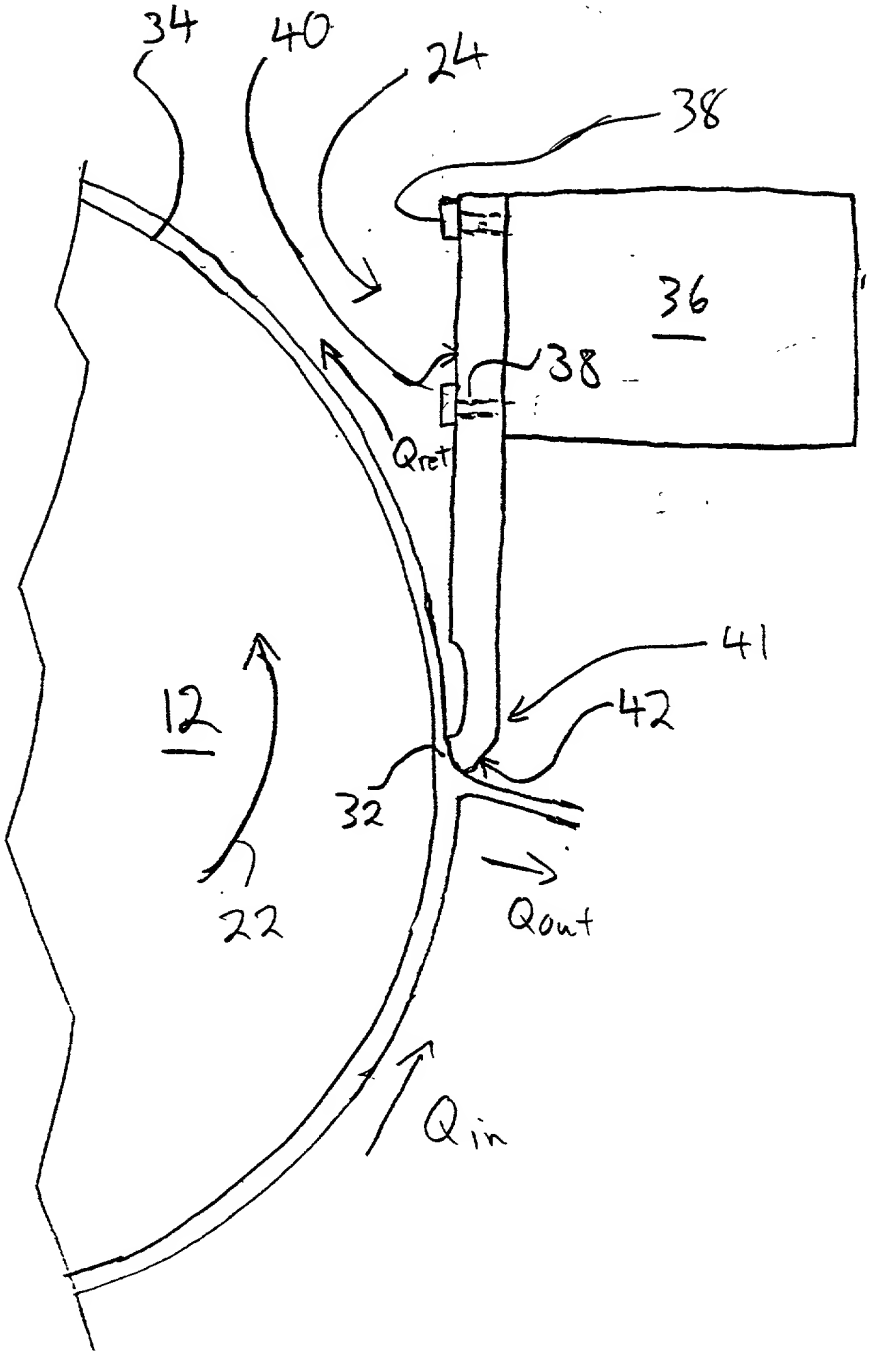

Fig. 2

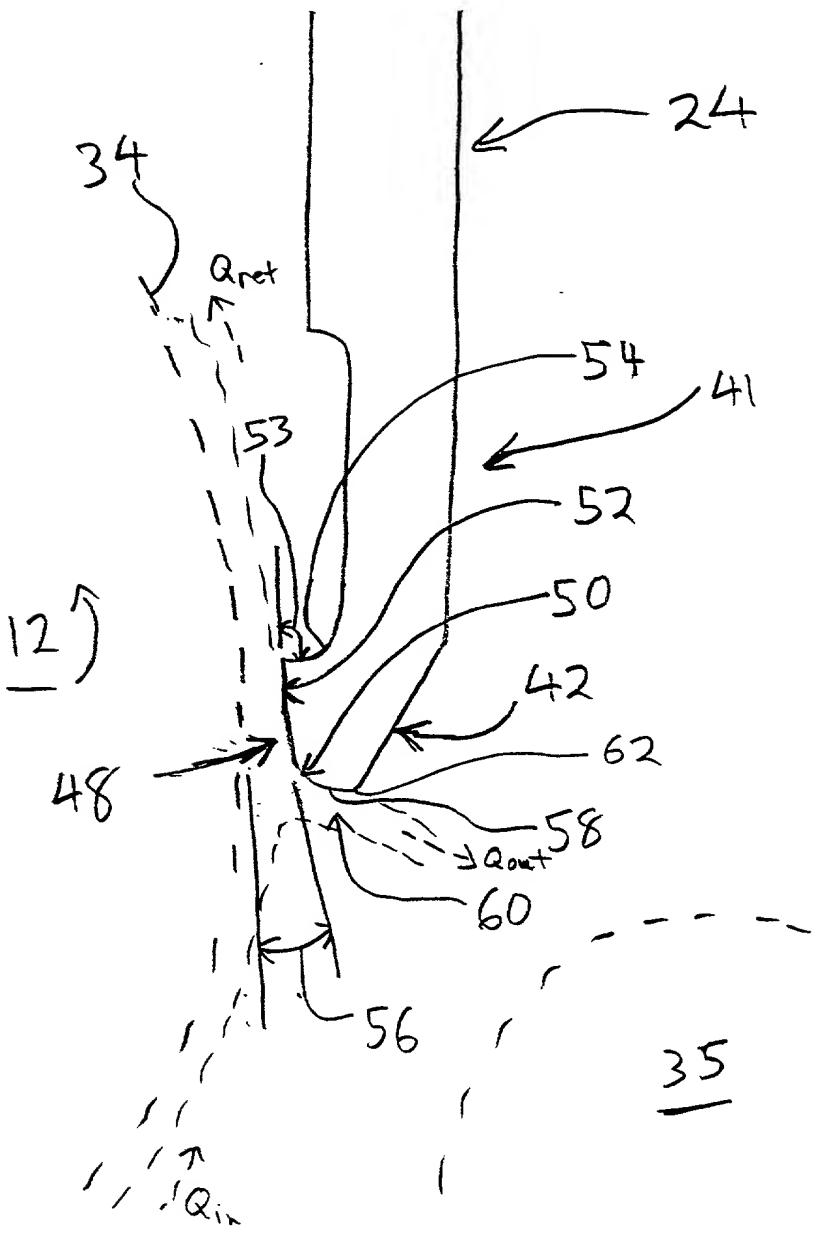

Fig. 3

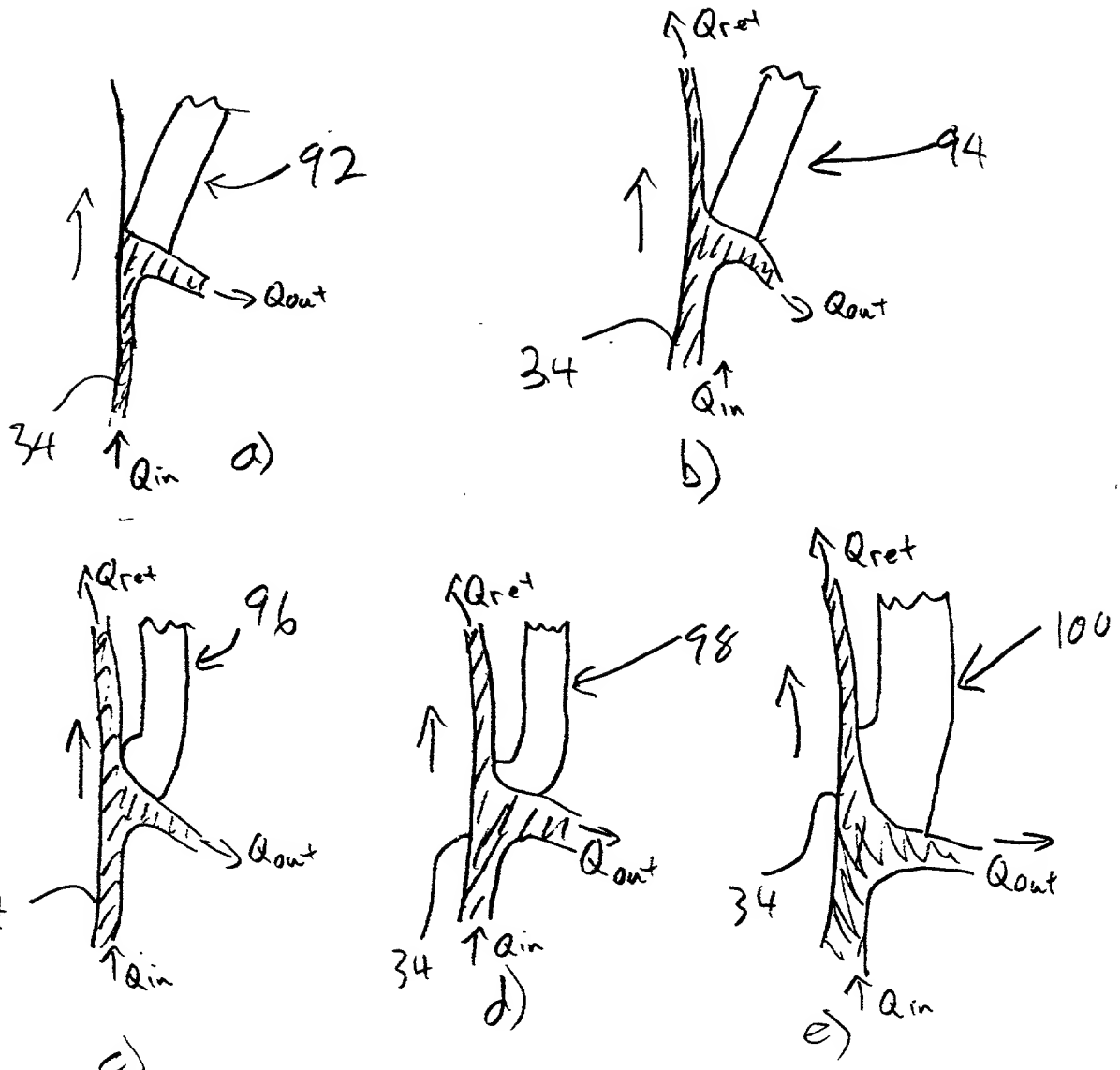
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Fig. 4

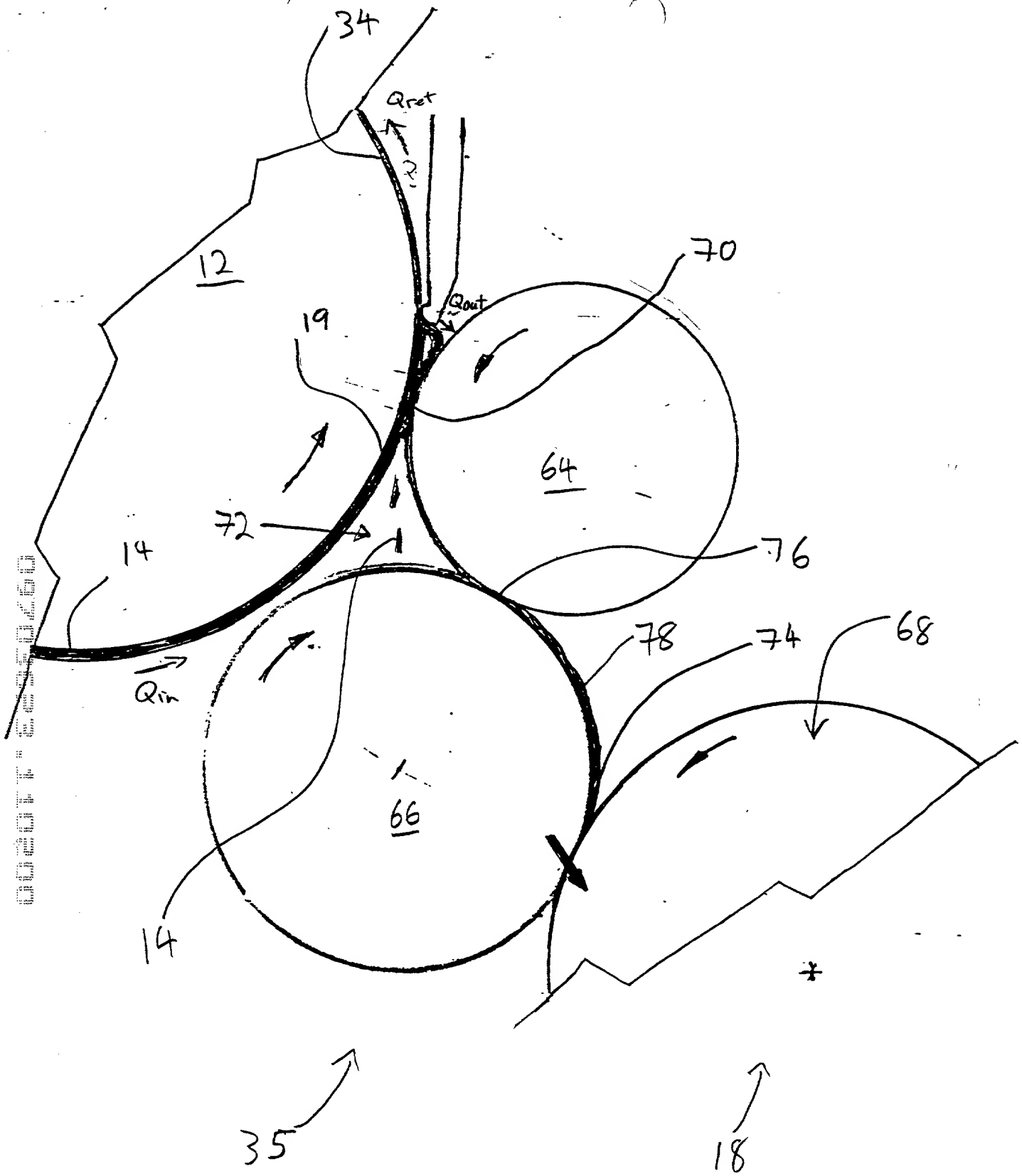

Fig. 5

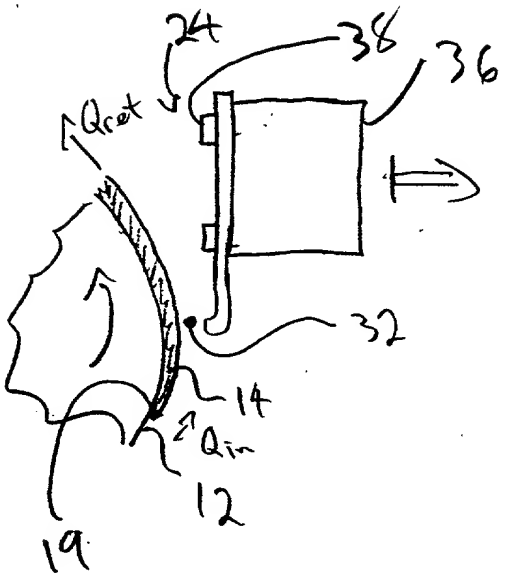

Fig. 6

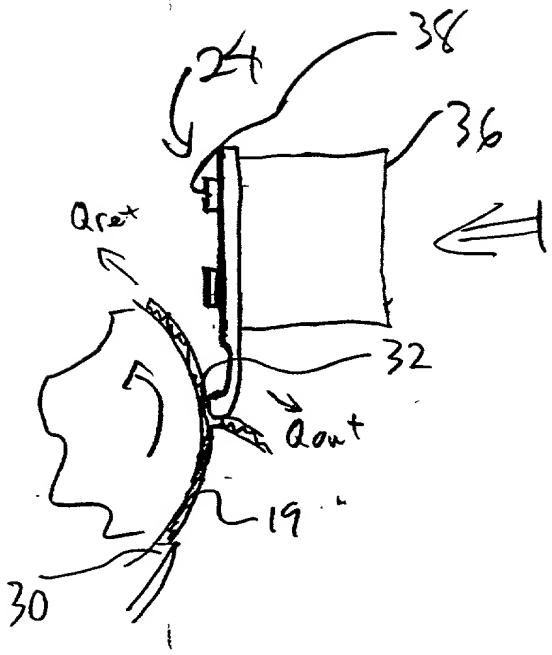

Fig. 7

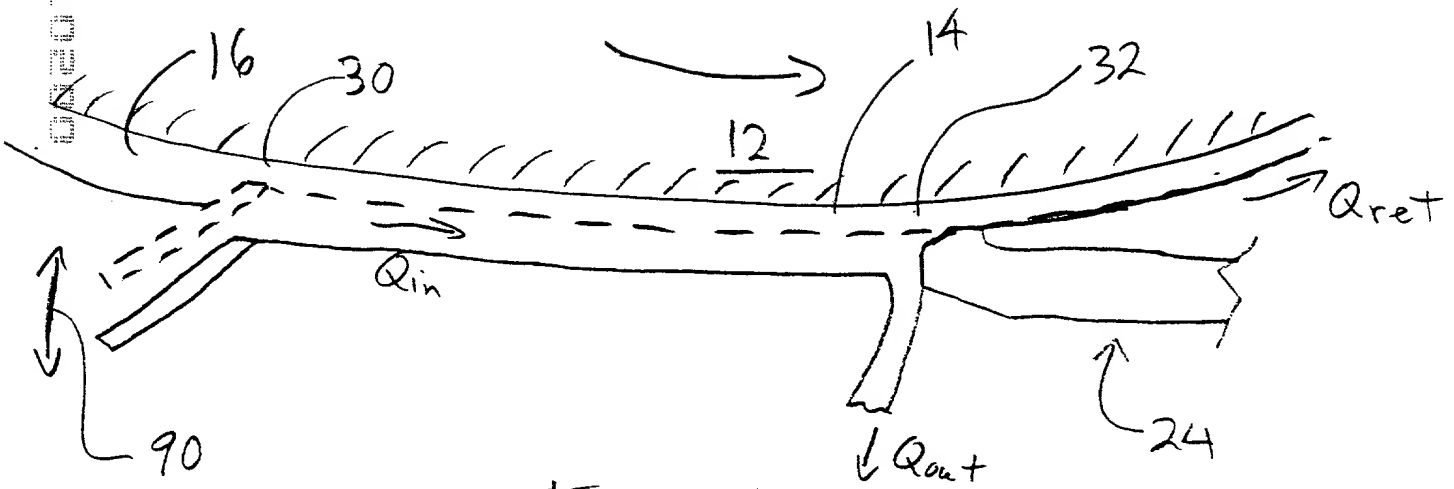

Fig. 8

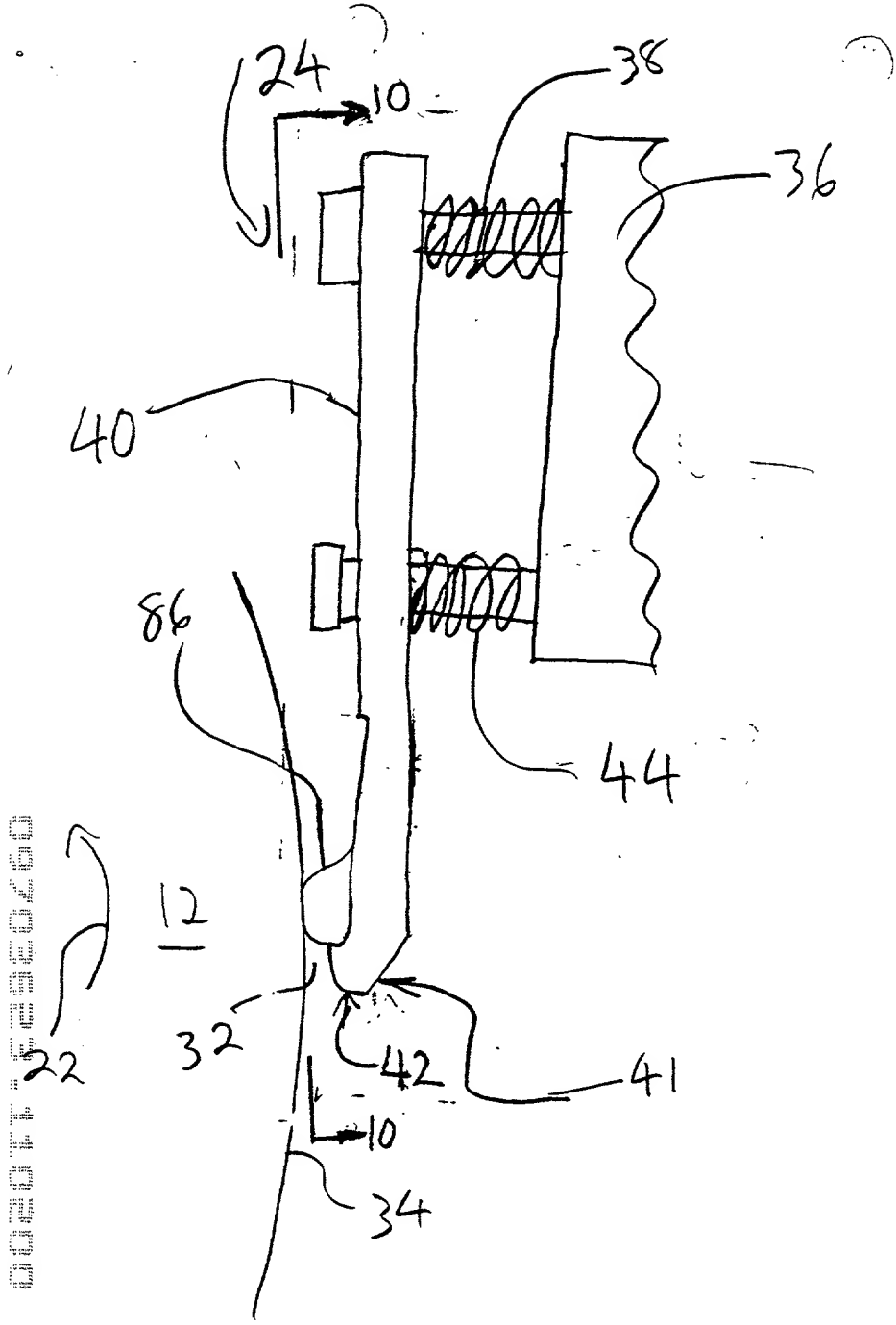

Fig. 9

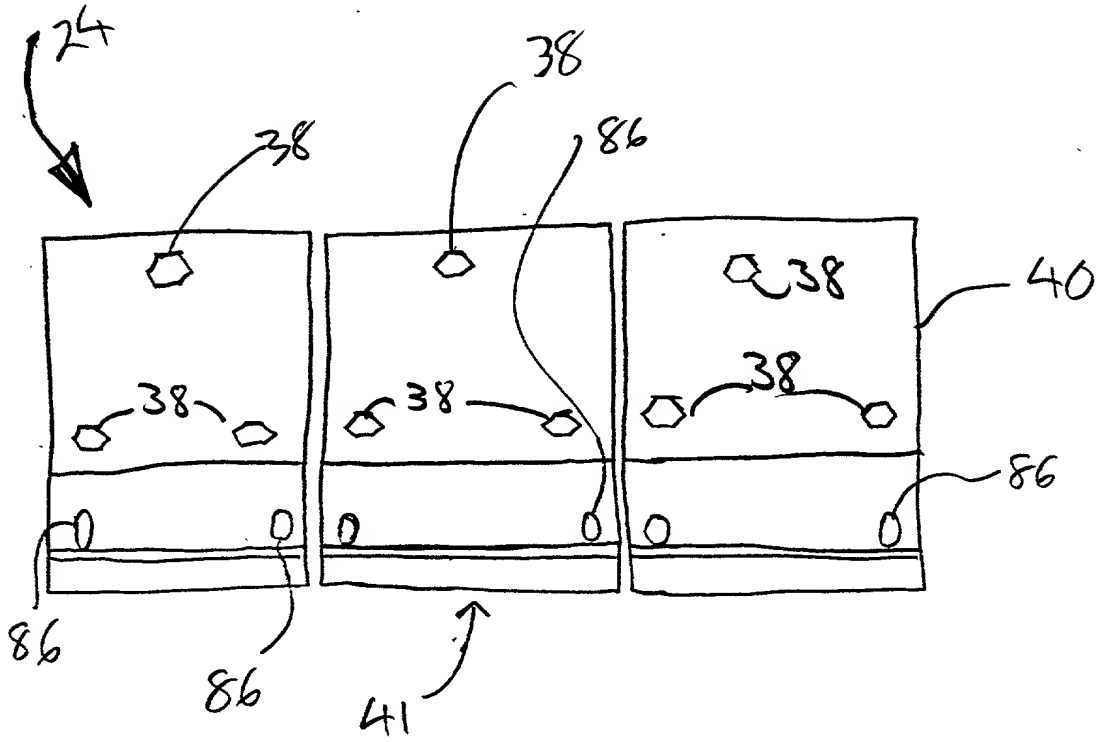

Fig 10

Docket No.
00322-0003

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

PRINTING PRESS INK TRANSFER MECHANISM AND EMPLOYMENT OF SAME

the specification of which

(check one)

- ☒ is attached hereto.
- ☐ was filed on _____ as United States Application No. or PCT International Application Number _____
- and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
2288354 (Number)	CANADA (Country)	02 NOVEMBER 1999 (Day/Month/Year Filed)	☐
(Number)	(Country)	(Day/Month/Year Filed)	☐
(Number)	(Country)	(Day/Month/Year Filed)	☐

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

60/168,754	DECEMBER 6, 1999
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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